AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A ceramic composite material comprising:

a ceramic substrate material;

at least one biological material; and

at least one nanoparticulate reinforcing material,

wherein the at least one biological material, and the at least one nanoparticulate reinforcing material are homogenously embedded in the ceramic substrate material, and the at least one nanoparticulate reinforcing material: (a) comprises inorganic nanoparticles that are linked to one another, and are formed from a nanoparticulate sol, and (b) cross-links the substrate material.

2. (Previously Presented) The composite material according to claim 1, wherein the at least one nanoparticulate reinforcing material comprises nanoparticulate oxides of elements of the II to V main or subgroup of the periodic table, or mixtures thereof.

3. (Currently Amended) The composite material according to claim 2, wherein the at least one nanoparticulate reinforcing material comprises nanoparticulate hydrolysis products of trialkoxy silanes~~, or mixtures thereof~~.

4. (Currently Amended) The composite material according to claim 1, wherein ~~a proportion of~~ the at least one nanoparticulate reinforcing material is up to 70 percent by weight of the composite material.

5. (Previously Presented) The composite material according to claim 1, wherein the at least one nanoparticulate reinforcing material comprises nanoparticles with a mean particle diameter smaller than 200 nm.

6. (Currently Amended) The composite material according to claim 1, wherein the at least one biological material comprises at least one of biological cells, cell aggregates~~groups~~, cell components, proteins and bioactive molecular agents~~ or biologically effective macromolecules~~.

7. (Currently Amended) The composite material according to claim ~~6~~1, wherein the at least one biological material comprises living or viable organisms.

8. (Currently Amended) The composite material according to claim 7, wherein the at least one biological material comprises bacteria, fungi, spores of bacteria or fungi, protozoans, algae, animal cells, vegetable cells, animal cell aggregatesgroups, or vegetable cell aggregatesgroups.

9. (Currently Amended) The composite material according to claim 7, wherein a proportion of the living or viable organisms areis 0.1 to 30 wt.-% based on a dry weight of the composite material.

10. (Previously Presented) The composite material according to claim 1, wherein the ceramic substrate material comprises aluminum oxide or alumosilicate.

11. (Currently Amended) The composite material according to claim 1, wherein at least one additive for increasing a biological activity of the at least one biological material, and/or at least one water soluble polymer is/are embedded in the ceramic substrate material.

12. (Previously Presented) The composite material according to claim 11, wherein the at least one additive for increasing the biological activity comprises polyols, glycerol, and/or nutrients.

13. (Original) The composite material according to claim 11, wherein the at least one water soluble polymer comprises polyvinyl alcohol or polyacrylic acid.

14. (Currently Amended) The composite material according to claim 11, wherein a proportion of the at least one additive embedded in the ceramic substrate material is up to 30 wt.-% based on a dry weight of the composite material.

15. (Currently Amended) A method for the production of a ceramic composite material according to claim 1, comprising the following steps:

producing a slurry comprising an aqueous dispersion of the ceramic substrate material and a dispersion of the at least one biological material,

adding to the slurry an inorganic nanosol capable of gelling,

reinforcing the ceramic composite material by neutralization of the slurry containingwith the at least one nanoparticulate reinforcing material at room temperature, or by a freeze-castingfreezing process, so that the nanosol is converted into a gel phase, thereby enveloping grains of the ceramic substrate material and cross-linking the grains with one another, whereby the ceramic composite material is formed, and

final drying of the ceramic composite material.

16. (Previously Presented) The method according to claim 15, wherein aluminum oxide or alumosilicate powder or fibers are added to the slurry as the ceramic substrate material.

17. (Currently Amended) The method according to claim 15, wherein ~~additional~~ additives are added to the slurry for improving biological activity of the at least one biological material and increasing mechanical stability.

18. (Previously Presented) The method according to claim 15, wherein the reinforcing is carried out in a mold.

19. (Currently Amended) The method according to claim 15, wherein the freeze-casting~~freezing~~ process comprises a freeze-treatment of the ceramic composite material at a temperature of up to -80 °C.

20. (Previously Presented) The method according to claim 15, wherein the drying of the ceramic composite material comprises freeze-drying at a temperature below a freezing point of water at up to -10 °C.

21. (Previously Presented) A method for the treatment of fluids, said method comprising :

providing a biocatalyst or biofilter comprising a ceramic composite material according to claim 1; and

contacting the biocatalyst or biofilter with the fluids to treat the fluids.

22. (Canceled).

23. (Currently Amended) The composite material according to claim 1, wherein the composite material is a molded article~~molding~~.

24. (Currently Amended) A molded article~~molding~~ produced from the composite material of claim 1.

25. (Currently Amended) The method according to claim 15, wherein the reinforcing step comprises a freeze-casting~~freezing~~ process wherein the slurry of the ceramic substrate material, the biomaterial and the reinforcing nanosol are frozen, whereby the sol is converted into the gel phase, enveloping the grains of the ceramic substrate material and cross-linking them with one another.

26. (Currently Amended) The method according to claim 15, wherein the reinforcing step comprises neutralization of the slurry containing~~with~~ the inorganic nanosol at room temperature.